Patent Claims

1. Method for winding a stator for a brushless direct current motor,

a) which has a stator body (9) with a pre-determined number of to be wound stator teeth (3),

b) wherein the stator teeth (3) are respectively wound with two coils (W1, W3; W2, W4), which are magnetically coupled and which permit the generation of opposite magnetic fields by the supply of current with variable directional orientation, and

c) wherein each of the two coils (W1, W3; W2, W4) comprises a predetermined number of conductors placed in parallel,

characterized in that

d) the stator teeth (3) are each simultaneously wound, in several partial winding steps, with two conductors (25, 27) or an even number of 2n conductors,

e) that one of the two conductors (25, 27) or n conductor of the 2n conductors of the one coil and the other of the two conductors (25, 27) or the other n conductor of the 2n conductors are allocated to the other coil

and

f) that a predetermined number of partial winding procedures is performed until the predetermined number of conductors per coil (W1, W3; W2, W4) has been reached.

2. Method according to Claim 1, **characterized in that** for allocation of the conductors (25, 27) to the two coils (W1, W3) prior to each partial winding procedure, the one end of the one (25) of the two conductors (25, 27) or the one end of n of the 2n conductors are allocated to a first connection contact (15_I) and the one end of the other (27) of the two conductors (25, 27) or the one end of the other n of the 2n conductors are allocated to a second connection contact (15_{II}) and that after each partial winding procedure the other end of the one (25) of the two conductors (25, 27) or the other end of the n of the 2n conductors are allocated to a third connection contact (15_{III}) and the other end of the other (27) of the two conductors (25, 27) or the other ends of the other n of the 2n conductors are allocated to a fourth connection contact (15_{IV}).

3. Method according to Claim 2, **characterized in that** the one end of the one (25) of the 2 conductors (25, 27) or the one end of n of the 2n conductors are connected, prior to the partial winding procedure, with the first connection contact (15_I) and the one end of the other (27) of the two conductors (25, 27) or the one ends of the other n of the 2n conductors with the second connection contact (15_{II}).

4. Method according to one of Claims 1 to 3, **characterized in that** the simultaneously wound conductors (25, 27) are conducted in close proximity during the winding procedure and preferably in a position maintained beyond the winding procedure.

5. Stator for a brushless direct current motor,

a) which presents a stator body (9) with a pre-determined number of wound stator teeth (3),

b) wherein the stator teeth (3) are respectively wound with two coils (W1, W3; W2, W4) which are magnetically coupled and which facilitate by the supply of current of variable directional orientation the generation of opposite magnetic fields, and

c) wherein each of the two coils (W1, W3 or W2, W4) comprises a predetermined number of in parallel arranged conductors,

characterized in that

d) two each conductors (25, 27) of which one conductor is allocated to the one coil and the other conductor to the other coil, or 2n conductors, of which n conductor is allocated to the one coil and the other n conductors to the other coil, are conducted in a substantially constant position vis-a-vis each other over the entire coil length .

6. Stator according to Claim 5, **characterized in that** two each or 2n conductors are conducted in close proximity.

7. Stator according to Claim 5 or 6, **characterized in that** the stator body (9) presents, preferable at one frontal side, connection contacts (15), which respectively are connected with the ends of the respective two, the magnetically-coupled coils (W1, W3; W2, W4) forming conductors.

8. Stator according to Claim 7, **characterized in that** the connection contacts (15) simultaneously serve for electrical contacting and mechanical fastening of a control circuit (17) preferably having a stamped grid (19) or a printed conductor plate.

9. Stator according to one of Claims 5 to 8, **characterized in that** the first and the second (15_I, 15_{II}), preferably also the third and fourth connection contacts (15_{III}, 15_{IV}) have means of attachment (15a) which facilitate successive connection, specifically clamping of conductor ends without the need of loosening already connected conductor ends.

10. Stator according to one of Claims 5 to 8, **characterized in that** the connection contacts (15) have a number of attachment means (15a) which correspond in number to the required partial winding steps according to the method to one of Claims 1 to 4.